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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,323

07/28/2008

Adil Al-Mayah

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EXAMINER

KENNEDY, JOSHUA T

ART UNIT

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3679

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/574,323	<b>Applicant(s)</b> AL-MAYAH ET AL.	
	<b>Examiner</b> JOSHUA T. KENNEDY	<b>Art Unit</b> 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Canada on 10/3/2003. It is noted, however, that applicant has not filed a certified copy of the PCT/CA03/01469 application as required by 35 U.S.C. 119(b).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 11, 12, 16, 19-21, 23 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Billings (British Patent 1,152,434).

As to Claims 1 and 16, Billings discloses a wedge anchor comprising:

a barrel (2) having a wedge receiving face (Fig 4; Examiner considers the right face of 2 to be the wedge receiving face) opposite a rod receiving face (Fig 4; Examiner considers the left face of 2 to be the rod receiving face), a passage extending therethrough between said wedge receiving face and said rod receiving face, said passage narrowing toward said rod receiving face and having an axial cross-sectional profile defining a convex (Fig 4; Examiner considers the right face of 2 to be the wedge

Art Unit: 3679

receiving face) opposite a rod receiving face (Fig 4; Examiner considers the left face of 2 to be the rod receiving face), and,

a plurality of wedges (8; Page 3, Lines 99-103) insertable into said passage, each of said wedges having a respective inner wedge face for defining a rod receiving passage for receiving a rod and an outer wedge face, opposite said inner wedge face, in axial cross-section having a profile complementary to said convex arc (Page 3, lines 5-6 and 81-90).

As to Claim 2, Billings discloses a wedge anchor wherein said convex arc defines a radius of curvature (Page 2, Lines 57-66).

As to Claims 11 and 12, Billings discloses a wedge anchor wherein said rod receiving passage is comprised of four wedges of equal size (Page 3, Lines 101-103).

As to Claim 19, Billings discloses a wedge anchor comprising:

a barrel (2) having a wedge receiving face (Fig 4; Examiner considers the right face of 2 to be the wedge receiving face) opposite a rod receiving face (Fig 4; Examiner considers the left face of 2 to be the rod receiving face), said passage having a convex curved axial cross-sectional profile narrowing toward said rod receiving face (Fig 4; Page 1, Lines 53-67); and,

a plurality of wedges (8; Page 3, Lines 99-103) insertable into said passage for defining a rod receiving passage for receiving a rod, said plurality of wedges being

Art Unit: 3679

contoured to slidingly engage with said barrel for exerting a compressive force radially inwardly along the length of the barrel on said rod, said compressive force being at a maximum toward the wedge receiving face of the barrel and at a minimum toward the rod receiving face of the barrel (Page 3, lines 5-6 and 81-90).

As to Claims 20 and 21, Billings discloses a wedge anchor wherein the curved axial cross-sectional profile is a convex arc having a radius of curvature (Page 2, Lines 57-66).

As to Claim 23, Billings discloses a barrel (2) for use in a wedge anchor (Fig 4) comprising a body, said body having a wedge receiving face (Fig 4; Examiner considers the right face of 2 to be the wedge receiving face) opposite a rod receiving face (Fig 4; Examiner considers the left face of 2 to be the rod receiving face), a passage extending therethrough between said wedge receiving face and said rod receiving face, said passage narrowing toward said rod receiving face and having an axial cross-sectional profile defining a convex arc for receiving a plurality of wedges into said passage, each of said wedges having a respective inner wedge face for defining a rod receiving passage for receiving a rod and an outer wedge face, opposite said inner wedge face, in axial cross-section having a profile complementary to said convex arc (Fig 4; Pg 1, Lines 53-67).

As to Claim 24, Billings discloses a wedge (8) for use in a wedge anchor having a barrel

Art Unit: 3679

having a wedge receiving face opposite a rod receiving face, a passage extending therethrough between said wedge receiving face and said rod receiving face, said passage narrowing toward said rod receiving face and having an axial cross-sectional profile defining a convex arc (Fig 4; Pg 1, Lines 53-67), comprising a body, insertable into said passage (Fig 4), said body having an inner wedge face for defining a portion of a rod receiving passage for receiving a rod (1) and an outer wedge face, opposite said inner wedge face, in axial cross-section having a profile defining a concave arc (Page 3, Lines 5-6 and 81-90)

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10, 13-15 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billings.

As to Claim 10, Billings discloses the wedge anchor significantly as claimed, but does not disclose said inner wedge face having a face thickness of between 0.5 and 0.7 mm.

It is not inventive to state the optimum values of a thickness of the wedge face.

Although silent on the dimension, the device of Billings inherently has a inner wedge face thickness relative to the size of the wedge. Through routine experimentation and

Art Unit: 3679

optimization, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the wedge anchor of Billings to have the thickness of the inner wedge being between 0.5 and 0.7 mm because this is merely the application of the of the expected level of skill on the part of one of ordinary skill producing expected and predicable results.

As to Claims 13 and 14, Billings discloses the wedge anchor significantly as claimed, but does not disclose said barrel being comprised of a metal, specifically stainless steel. Billings does not disclose any structural or functional significance as to the material of the barrel. The selection of a known material based upon its suitability for the intended use is a design consideration within the skill of the art. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). Accordingly, it would have been obvious to one of ordinary skill in the art to modify the assembly of Billings to have said barrel being comprised of a metal, specifically stainless steel as the reference does not disclose any structural or functional significance as to material of the barrel as this is merely a selection of materials producing expected and predictable results.

As to Claims 15 and 22, Billings discloses the wedge anchor significantly as claimed, but does not disclose the arc length is less than 0.5 pi radians. It is not inventive to state the optimum values of the arc length. Although silent on the dimension, the device of Billings inherently has an arc length relative to the size of the assembly (Page 2; Lines 56-66). Through routine experimentation and optimization, it would have been

Art Unit: 3679

obvious to one of ordinary skill in the art at the time the invention was made to modify the wedge anchor of Billings to have the arc length being less than  $0.5\pi$  radians because this is merely the application of the of the expected level of skill on the part of one of ordinary skill producing expected and predicable results.

Claims 3-9, 17, 18, 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Billings in view of Ozawa et al (US Patent 5,802,788).

As to Claims 3, 5, 6 and 17, Billings discloses the wedge anchor significantly as claimed, but does not disclose a sleeve, comprised of a malleable metal selected from the group consisting of copper, aluminium and alloys thereof, insertable into said rod receiving passage for receiving an end portion of said rod.

Ozawa et al teach a similar wedge anchor system having a sleeve, comprised of a malleable metal selected from the group consisting of copper, aluminium and alloys thereof, insertable into said rod receiving passage for receiving an end portion of said rod (Col 4, Lines 4-8) so that "the problem of the stress concentration can be reduced" (Col 6, Lines 55-60). It would have been obvious to one of ordinary skill in the art to modify the wedge anchor of Billings to have the sleeve as taught by Ozawa et al to reduce stress concentration problems of wedge anchor systems.

As to Claim 4, Billings discloses the wedge anchor significantly as claimed, but does not



Art Unit: 3679

disclose said wedges being of a length to ensure that they do not extend beyond the rod receiving face of said barrel when said wedge anchor is in its assembled configuration.

Ozawa et al teach a similar wedge anchor system and disclose that having said wedges being of a length to ensure that they do not extend beyond the rod receiving face of said barrel when said wedge anchor is in its assembled configuration is old and well known (Fig 1B). Ozawa et al do not disclose any structural or functional significance as to the length of the wedges. A change in the size of a prior art device is a design consideration within the skill of the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Accordingly, it would have been obvious to one of ordinary skill in the art to modify the assembly of Billings to have said wedges being of a length to ensure that they do not extend beyond the rod receiving face of said barrel when said wedge anchor is in its assembled configuration as taught by Ozawa et al as the reference does not disclose any structural or functional significance as to length of the wedges as this is merely a change in size producing expected and predictable results.

As to Claim 7, Billings in view of Ozawa et al discloses the wedge anchor significantly as claimed, but does not disclose said sleeve having a sleeve thickness of between 0.5 and 0.7 mm. It is not inventive to state the optimum values of a thickness of the wedge face. Although silent on the dimension, the device of Billings inherently has a sleeve thickness relative to the size of the wedge anchor assembly. Through routine experimentation and optimization, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the wedge anchor of Billings to

Art Unit: 3679

have the thickness of the sleeve being between 0.5 and 0.7 mm because this is merely the application of the of the expected level of skill on the part of one of ordinary skill producing expected and predicable results.

As to Claims 8 and 9, Billings discloses the wedge anchor significantly as claimed, but does not disclose said inner wedge face being comprised of a malleable metal selected from the group consisting of copper, aluminum, nickel and alloys thereof.

Ozawa et al teach a similar wedge anchor having an inner wedge face being made of aluminum "for capability of appropriate plastic deformation" (Col 9, Lines 7-10). Examiner also reminds Applicant that the selection of a known material based upon its suitability for the intended use is a design consideration within the skill of the art. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). Accordingly, it would have been obvious to one of ordinary skill in the art to modify the assembly of Billings to have said inner wedge face being comprised of a malleable metal selected from the group consisting of copper, aluminum, nickel and alloys thereof as taught by Ozawa et al for capability of appropriate plastic deformation and as this is merely a selection of materials producing expected and predictable results.

As to Claim 18, Billings teaches securing the wedge anchor to a rod end portion, but does not disclose applying a tensile force to said wedge anchor sufficient to break rod and measuring the applied force.

Art Unit: 3679

Ozawa et al teach a similar wedge anchor and rod wherein the tensile strength of the rod by applying a tensile force to said wedge anchor sufficient to break rod and measuring the applied force (Page 6, Lines 16-27) in the optimization of the desired stress concentrations applied by the wedge to the rod (Col 6, Lines 55-62). It would have been obvious to one of ordinary skill in the art to test the wedge anchor and rod of Billings as taught by Ozawa et al in the optimization of the desired stress concentrations applied by the wedge to the rod.

As to Claim 25, Billings teaches a wedge anchor comprising:

a barrel (2) having a wedge receiving face (Fig 4; Examiner considers the right face of 2 to be the wedge receiving face) opposite a rod receiving face (Fig 4; Examiner considers the left face of 2 to be the rod receiving face), a passage extending therethrough between said wedge receiving face and said rod receiving face, said passage narrowing toward said rod receiving face and having an axial cross-sectional profile defining a convex arc having a constant arc radius (Fig 4; Pg 1, Lines 53-67; Page 2, Lines 54-66);

four steel wedges (8; Page 3, Lines 99-103) of equal size insertable into said passage, each of said wedges having a respective inner wedge face for defining a rod receiving passage for receiving a rod and an outer wedge face, opposite said inner wedge face, in axial cross-section having a profile complementary to said convex arc defining a concave arc having said constant arc radius (Page 3, lines 5-6 and 81-90).

Art Unit: 3679

However Billings does not disclose said barrel being comprised of steel. Billings does not disclose any structural or functional significance as to the material of the barrel. The selection of a known material based upon its suitability for the intended use is a design consideration within the skill of the art. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). Accordingly, it would have been obvious to one of ordinary skill in the art to modify the assembly of Billings to have said barrel being comprised of steel as the reference does not disclose any structural or functional significance as to material of the barrel as this is merely a selection of materials producing expected and predictable results.

Further Billings does not disclose a sleeve insertable into said rod receiving passage for receiving an end portion of said rod, said sleeve being comprised of a malleable metal.

Ozawa et al teach a similar wedge anchor system having a sleeve, comprised of a malleable metal insertable into said rod receiving passage for receiving an end portion of said rod (Col 4, Lines 4-8) so that "the problem of the stress concentration can be reduced" (Col 6, Lines 55-60). It would have been obvious to one of ordinary skill in the art to modify the wedge anchor of Billings to have the sleeve as taught by Ozawa et al to reduce stress concentration problems of wedge anchor systems.

As to Claim 26, Billings discloses the wedge anchor significantly as claimed, but does not disclose said wedges being of a length to ensure that they do not extend beyond the

Art Unit: 3679

rod receiving face of said barrel when said wedge anchor is in its assembled configuration.

Ozawa et al teach a similar wedge anchor system and disclose that having said wedges being of a length to ensure that they do not extend beyond the rod receiving face of said barrel when said wedge anchor is in its assembled configuration is old and well known (Fig 1B). Ozawa et al do not disclose any structural or functional significance as to the length of the wedges. A change in the size of a prior art device is a design consideration within the skill of the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Accordingly, it would have been obvious to one of ordinary skill in the art to modify the assembly of Billings to have said wedges being of a length to ensure that they do not extend beyond the rod receiving face of said barrel when said wedge anchor is in its assembled configuration as taught by Ozawa et al as the reference does not disclose any structural or functional significance as to length of the wedges as this is merely a change in size producing expected and predictable results.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 5141356, 4837995, 5713169, 4662134, 6634147, 4633540, 3505824, 3099109, 5154532 and RE27954 have all been cited to show similar wedge anchor assemblies.

Art Unit: 3679

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA T. KENNEDY whose telephone number is (571)272-8297. The examiner can normally be reached on M-F: 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joshua T. Kennedy/  
Examiner, Art Unit 3679  
11/17/2008

/Daniel P. Stodola/  
Supervisory Patent Examiner, Art Unit 3679